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Certificate No.: TC- 5548

Format No: CP/TF/01

## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-06-25-14** **Date: 28-06-2018** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division. |
| **Agency** | : | Technical Manager (West), KRIDL, BBMP, Bangalore. |
| **Customer's Reference** | : | BBMP/EE(YNK.D)/W.O/000008/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 25-06-2018 |
| **Sample ID No** | : | 2018-06-25-14 /01 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 26-06-2018 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| SLNo. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 2.85 | – |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 295.5 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.15 | – |
| 4 | Standard Consistency (%) | 28.0% | Not specified |
| 5 | Initial Setting time (minutes) | 185 minutes | Not less than 30 minutes |
| 6 | Final Setting time (minutes) | 270 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) (mm) | 1mm | Not more than 10 mm |

**Note:**

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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****End of Report****

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Certificate No.: TC- 5548

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : CP-2018-07-03-06 **Date: 09/07/2018**

**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division.

**Agency** : Technical Manager (West), KRIDL, BBMP, Bangalore.

**Customer's Reference** : BBMP/EE(YNK.D)/W.O/000008/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-07-2018

**Sample ID No** : 2018-07-03-06 /03

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 09/07/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (mm) | (Sq.mm) | (kg) | (KN) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | RMC | M20 | 02/07/2018 | 09/07/2018 | 149.77 X 151.80 X 150.56 | 22734 | 8.584 | 411.0 | 18.1 | 18.1 |
| 2 | RMC | M20 | 02/07/2018 | 09/07/2018 | 150.33 X 150.12 X 149.05 | 22567 | 8.135 | 413.4 | 18.3 | |
| 3 | RMC | M20 | 02/07/2018 | 09/07/2018 | 151.63 X 151.05 X 150.92 | 22905 | 8.291 | 413.2 | 18.0 | |

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Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....


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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-06-25-14** **Date: 28-06-2018** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division. |
| **Agency** | : | Technical Manager (West), KRIDL, BBMP, Bangalore. |
| **Customer Reference** | : | BBMP/EE(YNK.D)/W.O/000008/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 25-06-2018 |
| **Sample ID No** | : | 2018-06-25-14 /02(b) |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 25-06-2018 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken** : 5000 grams

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 573 | 573 | 11.5 | 88.5 | 90-100 |
| 3 | 10 mm | 2337 | 2910 | 58.2 | 41.8 | 25-55 |
| 4 | 4.75 mm | 1736 | 4646 | 92.9 | 7.1 | 0-10 |
| 5 | Pan | 354 | 5000 | 100 | 0 | – |

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## TEST RESULTS OF GRADATION FOR GSB
## (IS 2386:(Part 1) 1963 (RA2011)

**Lab ID** : CP-RW-2018-07-05-09 **Date: 06-07-2018**
**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
**Address** : Yelahanka Sub Division, BBMP, Bangalore.
**Project Name** : Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division.
**Agency** : Technical Manager (West), KRIDL, BBMP, Bangalore.
**Customer Reference** : BBMP/EE(YNK.D)/W.O/000008/2018-19
**Source of Sample** : Sample supplied by Agency
**Sample Condition** : Satisfactory
**Date of Receipt** : 05-07-2018
**Sample ID No** : 2018-07-05-09/01
**Type of Mix** : GSB (Granular Sub Base)
**Date of test** : 05-07-2018
**Oven Dry Weight** : 10000 Grams

| IS Sieve Size(mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | % Cumulative Weight Retained | % Passing | Spec. Limit Vide Table 400.1 MORTH Specification |
|---|---|---|---|---|---|
| 75 | 0 | 0 | 0.0 | 100.0 | 100 |
| 53 | 1300 | 1300 | 13.0 | 87.0 | 80-100 |
| 26.5 | 2300 | 3600 | 36.0 | 64.0 | 55-90 |
| 9.5 | 500 | 4100 | 41.0 | 59.0 | 35-65 |
| 4.75 | 2900 | 7000 | 70.0 | 30.0 | 25-55 |
| 2.36 | 700 | 7700 | 77.0 | 23.0 | 20-40 |
| 0.425 | 1000 | 8700 | 87.0 | 13.0 | 10-25 |
| 0.075 | 900 | 9600 | 96.0 | 4.0 | 0-5 |

**TESTS ON FILLER SCREEN MATERIALS**

| Sl no | Particulars | Test results | Spec.Limit Vide Table 400.2 MORTH Specification |
|---|---|---|---|
| 1 | Liquid Limit, % | 23.70% | Maximum 25 |
| 2 | Plasticity index, % | Non plastic | Maximum 6 |

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Quality Manager

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Certificate No.: TC- 5548

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2018-07-03-06** **Date: 09/07/2018**

**Customer** : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

**Address** : Yelahanka Sub Division, BBMP, Bangalore.

**Project Name** : Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division.

**Agency** : Technical Manager (West), KRIDL, BBMP, Bangalore.

**Customer's Reference** : BBMP/EE(YNK.D)/W.O/000008/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-07-2018

**Sample ID No** : 2018-07-03-06 /01

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 09/07/2018

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen | Cross sectional area | Weight of the sample | Failure Load | Compressive strength | Average Compressive Strength |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (mm) | (Sq.mm) | (kg) | (KN) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | RMC | M20 | 02/07/2018 | 09/07/2018 | 150.42 X 151.33 X 149.80 | 22764 | 8.301 | 411.7 | 18.1 | 18.3 |
| 2 | RMC | M20 | 02/07/2018 | 09/07/2018 | 150.85 X 150.00 X 149.78 | 22628 | 8.396 | 411.6 | 18.2 | |
| 3 | RMC | M20 | 02/07/2018 | 09/07/2018 | 149.85 X 150.51 X 151.39 | 22554 | 7.955 | 422.1 | 18.7 | |

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2018-06-25-14** **Date: 28-06-2018** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division. |
| **Agency** | : | Technical Manager (West), KRIDL, BBMP, Bangalore. |
| **Customer's Reference** | : | BBMP/EE(YNK.D)/W.O/000008/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 25-06-2018 |
| **Sample ID No** | : | 2018-06-25-14 /02(a) |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 25-06-2018 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 280 | 280 | 1.9 | 98.1 | 90-100 |
| 3 | 20 mm | 5289 | 5569 | 37.1 | 62.9 | 30-70 |
| 4 | 10 mm | 4700 | 10269 | 68.5 | 31.5 | 10-35 |
| 5 | 4.75 mm | 4190 | 14459 | 96.4 | 3.6 | 0-5 |
| 6 | Pan | 541 | 15000 | 100.0 | 0 | --- |

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# TEST REPORT OF CEMENT CONCRETE CUBES

Date: 09/07/2018

| | | |
|---|---|---|
| **Lab ID** | : | CP-2018-07-03-06 |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Site preparation for indira canteen in Raithara santhe of Ward No-01 in Yelahanka Sub Division. |
| **Agency** | : | Technical Manager (West), KRIDL, BBMP, Bangalore. |
| **Customer's Reference** | : | BBMP/EE(YNK.D)/W.O/000008/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 03-07-2018 |
| **Sample ID No** | : | 2018-07-03-06 /05 |
| **Customer ID** | : | RMC |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 09/07/2018 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 02/07/2018 | 09/07/2018 | 149.47 X 151.04 X 149.96 | 22576 | 8.127 | 409.8 | 18.2 | 18.4 |
| 2 | RMC | M20 | 02/07/2018 | 09/07/2018 | 150.33 X 151.71 X 149.79 | 22806 | 8.310 | 424.5 | 18.6 | |
| 3 | RMC | M20 | 02/07/2018 | 09/07/2018 | 151.58 X 150.74 X 150.17 | 22849 | 8.268 | 421.1 | 18.4 | |

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